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Blockchain and distributed ledger technologies — Vocabulary

Chaîne de blocs et technologies de registres distribués — Vocabulaire

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Foreword

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This document was prepared by Technical Committee ISO/TC 307, *Blockchain and distributed ledger technologies*.

This second edition cancels and replaces the first edition (ISO 22739:2020), which has been technically revised.

The main changes are as follows:

— inclusion of new terms and definitions.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document defines terms relating to blockchain and distributed ledger technologies (DLTs) to clarify the meaning of terms and concepts used in other documents within the domain of ISO/TC 307.

Clear, consistent and coherent standards require clear, consistent and coherent terminology. This document follows the rules and guidelines set by ISO/TC 37, *Language and terminology,* for terminology standards.

This document applies to all types of organizations (e.g. commercial enterprises, government agencies and non-profits). The target audience includes but is not limited to academics, solution architects, customers, users, tool developers, regulators, auditors and standards development organizations.

Blockchain and distributed ledger technologies — Vocabulary

1 Scope

This document defines fundamental terminology for blockchain and distributed ledger technologies.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
asset
anything that has value to a stakeholder

[SOURCE: ISO 19299:2020, 3.1, modified — The Note to entry has been removed.]

3.2
block
structured data comprising a *block header* (3.4) and *block data* (3.3)

3.3
block data
structured data comprising zero or more *transaction records* (3.95) or references to transaction records

3.4
block header
structured data that includes a *hash link* (3.47) to the previous *block* (3.2), if present

Note 1 to entry: A block header can also contain a *timestamp* (3.91), a *nonce* (3.62), and other *distributed ledger technology (DLT) platform* (3.33) specific data, including a *hash value* (3.48) of corresponding *transaction records* (3.95).

3.5
block reward
reward given to *miners* (3.59) or *validators* (3.99) after a *block* (3.2) is *confirmed* (3.9) in a *blockchain system* (3.7)

Note 1 to entry: A reward can be in the form of a *cryptoasset* (3.14).

3.6
blockchain
distributed ledger (3.23) with *confirmed blocks* (3.10) organized in an append-only, sequential chain using *hash links* (3.47)

3.7
blockchain system
system that implements a *blockchain* (3.6)

Note 1 to entry: A blockchain system is a type of *distributed ledger technology (DLT) system* (3.35).

3.8
blockchain technology
technology that enables the operation and use of *blockchains* (3.6)

3.9
confirmed
accepted by *consensus* (3.12) to be recorded in a *distributed ledger* (3.23)

3.10
confirmed block
block (3.2) that has been *confirmed* (3.9)

3.11
confirmed transaction
transaction (3.93) that has been *confirmed* (3.9)

3.12
consensus
agreement among *distributed ledger technology (DLT) nodes* (3.31) that:

— a *transaction* (3.93) is *validated* (3.97);

— the *distributed ledger* (3.23) contains a consistent set and ordering of records of validated transactions

Note 1 to entry: Consensus does not necessarily mean that all DLT nodes agree.

Note 2 to entry: The details regarding consensus differ among *DLT systems* (3.35) and this can be a distinguishing characteristic between one DLT system and another.

3.13
consensus mechanism
set of rules and procedures by which *consensus* (3.12) is reached

Note 1 to entry: These rules and procedures are interrelated.

3.14
cryptoasset
crypto-asset
digital asset (3.21) implemented using cryptographic techniques

Note 1 to entry: *distributed ledger technology (DLT) systems* (3.35) can be used to manage or transfer cryptoassets.

3.15
cryptocurrency
cryptoasset (3.14) designed to work as a medium of payment or value exchange

Note 1 to entry: Cryptocurrency involves the use of decentralized control and *cryptography* (3.16) to secure *transactions* (3.93), control the creation of additional *assets* (3.1), and verify the transfer of assets in a *distributed ledger technology (DLT) system* (3.35).

3.16
cryptography
discipline that embodies the principles, means and methods for the transformation of data in order to hide their semantic content, prevent their unauthorized use, or prevent their undetected modifications

[SOURCE: ISO 7498-2:1989, 3.3.20, modified — The Note to entry has been removed.]

3.17
decentralized application
Dapp
application that runs on a *decentralized system* (3.20)

3.18
decentralized identifier
DID
identifier (3.49) that is issued or managed in a *decentralized system* (3.20) and designed to be unique within a context

Note 1 to entry: Decentralized identifiers are used in systems that do not rely on central registration authorities.

3.19
decentralized identity
identity (3.50) that is managed in a *decentralized system* (3.20)

3.20
decentralized system
distributed system (3.24) wherein control is distributed among the persons or organizations participating in the operation of the system

Note 1 to entry: In a decentralized system, the distribution of control among persons or organizations participating in the system is determined by the system's design.

3.21
digital asset
asset (3.1) that exists only in digital form or that is the digital representation of another asset

3.22
digital signature
data which, when appended to data to be signed, enable the user of the data to authenticate their origin and integrity

[SOURCE: ISO 14641:2018, 3.17, modified — "digital document" has been replaced with "data to be signed".]

3.23
distributed ledger
ledger (3.54) that is shared across a set of *distributed ledger technology (DLT) nodes* (3.31) and synchronized between the DLT nodes using a *consensus mechanism* (3.13)

Note 1 to entry: A distributed ledger is designed to be *immutable* (3.51), tamper-resistant, tamper-evident and append-only, containing final and definitive *ledger records* (3.55) of *confirmed* (3.9) and *validated* (3.97) *transactions* (3.93).

3.24
distributed system
system in which components located on networked computers communicate and coordinate their actions by interacting with each other

3.25
DLT
distributed ledger technology
technology that enables the operation and use of *distributed ledgers* (3.23)

3.26
DLT account
distributed ledger technology account
representation of an *entity* (3.38) participating in a *transaction* (3.93) in a *DLT system* (3.35)

3.27
DLT address
distributed ledger technology address
data element designating the originating source or destination of a *transaction* (3.93)

3.28
DLT bridge
distributed ledger technology bridge
DLT oracle (3.32) that enables *interoperability* (3.52) between a *DLT system* (3.35) and other systems that implement *ledgers* (3.54)

Note 1 to entry: The other systems can also be DLT systems.

3.29
DLT governance
distributed ledger technology governance
system for directing and controlling a *DLT system* (3.35) including the distribution of *on-ledger* (3.68) and *off-ledger* (3.66) decision rights, incentives, responsibilities and accountabilities

3.30
DLT network
distributed ledger technology network
network of *DLT nodes* (3.31) which make up a *DLT system* (3.35)

3.31
DLT node
distributed ledger technology node
device or process that participates in a network and stores a complete or partial replica of the *ledger records* (3.55)

3.32
DLT oracle
distributed ledger technology oracle
service that updates a *distributed ledger* (3.23) using data from outside of a *DLT system* (3.35)

Note 1 to entry: DLT oracles can be used by *smart contracts* (3.88) to access data from sources external to the DLT system.

3.33
DLT platform
distributed ledger technology platform
set of processing, storage and communication *entities* (3.38) that together provide the capabilities of the *DLT system* (3.35) on each *DLT node* (3.31)

3.34
DLT solution
distributed ledger technology solution
solution built using a *DLT system* (3.35) to accomplish some business objectives common to a group of *DLT users* (3.36)

Note 1 to entry: A DLT solution consists of the DLT system with its *DLT nodes* (3.31) and communication networks plus all the *decentralized applications* (3.17) connected to each of the DLT nodes, along with any associated non-DLT systems connected to the DLT system.

3.35
DLT system
distributed ledger system
distributed ledger technology system
system that implements a *distributed ledger* (3.23)